NPTEL Video Course - Mathematics - NOC:Introduction to Galois Theory

Subject Co-ordinator - Prof. Krishna Hanumanthu

Co-ordinating Institute - Chennai Mathematical Institute

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Motivation and overview of the course
Lecture 2 - Review of group theory
Lecture 3 - Review of ring theory - I
Lecture 4 - Review of ring theory - II
Lecture 5 - Review of field theory - I
Lecture 6 - Review of field theory - II
Lecture 7 - Review of field theory - III
Lecture 8 - Problem Session - Part 1
Lecture 9 - Problem Session - Part 2
Lecture 10 - Beginning of Galois theory
Lecture 11 - Fixed fields
Lecture 12 - Theorem I on fixed fields
Lecture 13 - Theorem II on fixed fields
Lecture 14 - Galois extensions, Galois groups
Lecture 15 - Normal extensions
Lecture 16 - Problem Session - Part 3
Lecture 17 - Problem Session - Part 4
Lecture 18 - Separable extension - Part 1
Lecture 19 - Separable extension - Part 2
Lecture 20 - Characterization of Galois extensions - Part 1
Lecture 21 - Characterization of Galois extensions - Part 2
Lecture 22 - Examples of Galois extensions
Lecture 23 - Motivating the main theorem of Galois theory
Lecture 24 - Main theorem of Galois theory - Part 1
Lecture 25 - Main theorem of Galois theory - Part 2
Lecture 26 - Fundamental theorem of algebra
Lecture 27 - Problem Session - Part 5
Lecture 28 - Problem Session - Part 6
Lecture 29 - Problem Session - Part 7

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Lecture 30 - Problem Session - Part 8
Lecture 31 - Problem Session - Part 9
Lecture 32 - Kummer extensions - Part 1
Lecture 33 - Kummer extensions - Part 2
Lecture 34 - Kummer extensions - Part 3
Lecture 35 - Cyclotomic extensions - Part 1
Lecture 36 - Cyclotomic extensions - Part 2
Lecture 37 - Solvability by radicals
Lecture 38 - Characterizations of solvability - Part 1
Lecture 39 - Characterizations of solvability - Part 2
Lecture 40 - Discriminants, Galois groups of polynomials
Lecture 41 - Quartics are solvable
Lecture 42 - Solvable groups - Part 1
Lecture 43 - Solvable groups - Part 2
Lecture 44 - Solvable groups - Part 3
Lecture 45 - Insolvability of quintics
Lecture 46 - Problem Session - Part 10
Lecture 47 - Problem Session - Part 11
Lecture 48 - Problem Session - Part 12
Lecture 49 - Problem Session - Part 13
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